

IV. REMARKS

Status of the Claims

Claims 1, 8, and 11 are amended. Claims 1-11 remain under consideration.

Summary of the Office Action

Claims 1,5,8,10, and 11 stand rejected under 35USC102(e) on the basis of the cited reference Forse, U.S. Patent No. 4,912,766. The Examiner is respectfully requested to reconsider his rejection in view of the following remarks. Claims 2-4, 6,7, and 9 have been indicated to contain patentable subject matter if written in independent form or amended to be depended on an allowable claim.

The Invention

According to independent claims 1, 8, and 11, as amended, a method, device and communication device for detecting pauses in speech signals is disclosed in which the frequency spectrum is divided into two or more sub-bands. Samples of the signals on the sub-bands are stored at intervals, the energy levels of the sub-bands are determined on the basis of the stored samples, a power threshold value (thr) is determined, and the energy levels of the sub-bands are compared with said power threshold value (thr). A minimum number of subbands is set so that, in a noise situation, a speech pause can be verified by checking to determine if there is a pause detected in at least said minimum number of subbands. This avoids the problem in which variations in noise level can precipitate false readings. This is not possible in the system of Forte which will not detect a pause until the energy level drops below a threshold for 20 consecutive samples.

Discussion of the Cited References

The reference Forse is cited in support of the examiner's anticipation rejection and describes a speech processor which is primarily concerned with gain control to prevent distortion of the speech signals. It is mainly concerned with detecting the presence of speech and accordingly sets a complex noise/speech threshold which is compared to a maximum energy sample. When the maximum energy level exceeds the threshold, speech is deemed present. A pause is determined conversely when the maximum energy level fails to exceed the threshold for 20 consecutive cycles. In this system a spike in noise will reset the cycle and the pause determination may be delayed repeatedly. In the system of this invention a pause is noted and counted until a minimum number of samples detects a pause. The difference is that the pause determination cycle is not reset every time a noise spike occurs.

The Issue of Anticipation

It is well settled that a claim is anticipated, "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (See CHISOLM, Federal Circuit Guide, Pg. 1221).

"...it must be shown that the reference contains all of the elements of the claims apart from irrelevant or merely extraneous variations, and the elements are arranged in the same way to achieve the same result which is asserted to be an inventive function..." 454 U.S. 1129 (1981)

The elements of the claim and their function and purpose within the claim must be reviewed in a manner similar to an infringement analysis. If the device described in the cited reference would

not infringe if it was later, it will not anticipate if the reference is earlier.

Applying this standard to the device of the reference Forse it becomes clear that it is missing a significant element of independent claims 1, 8, and 11, as amended. There is no provision in the system of Forse for setting a threshold for minimum number pause detections. Claim 1 states:

"wherein a pause detection is performed on each sub-band on the basis of the comparison results, the number of sub-bands on which a pause is detected are compared with an activity threshold, wherein if the number of sub-bands on which a pause is detected is greater than said activity threshold, it is deduced that there is a pause in the speech."

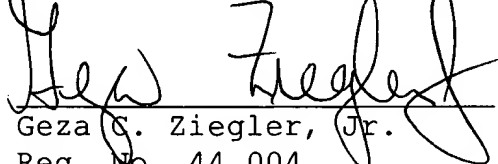
Equivalent language is also contained in claims 8 and 11. Since this element forms no part of the system of Forse, there would be no infringement if Forse was later, therefore, the cited reference Forse does not support the rejection by the Examiner based on anticipation.

The above arguments are equally applicable to the rejected dependent claims.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$110.00 is enclosed for a one month extension of time. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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6 August 2003
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